MCCLELLAN

KEYSPAN ENERGY DELIVERY NEW ENGLAND

Direct Testimony of Patrick J. McClellan

Exhibit KEDNE/PJM-1

D.T.E. 03-40

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Patrick J. McClellan. My business address is One MetroTech Center, Brooklyn, New York 11201-3851.

Q. By whom are you employed and in what capacity?

A. I am the Director of Rate Recovery for KeySpan Corporate Services LLC (the "Service Company"). As the Director of Rate Recovery, I oversee the planning, scheduling, strategy and implementation of the ratemaking activities for Boston Gas Company d/b/a KeySpan Energy Delivery New England ("Boston Gas" or the "Company").

Q. Please briefly describe your educational background and business experience.

A. I received a Bachelor of Science in Accounting from St. John Fisher College in Rochester, New York in 1974, and became a Certified Public Accountant in 1980. From 1974 through 1980, I was employed by the New York Public Service Commission, serving first as an Auditor and then as a Staff Audit Supervisor with responsibility for auditing the financial operations of several regulated gas and electric utilities in New York. In 1980, I joined the staff of Northeast Utilities Service Corporation in Berlin, Connecticut as a Staff Accountant. In 1981, I accepted a position with Brooklyn Union Gas Company (now part of the KeySpan

organization) as Senior Staff Accountant. Since that time, I have served in a number of positions within the KeySpan organization, including Principal Accountant for Rate Proceedings (1983-85); Audit Director (1985-88), Director of Accounting Operations (1988-94), Director of Customer Satisfaction (1994-98), Director of Financial Analysis (1998-99), Manager of the Financial System Project Team (1999-01), and Director of Financial Forecasting and Corporate Budgets (2001-02).

Q. Have you previously testified before the Department of Telecommunications and Energy or any other regulatory agency?

A. I have not had the opportunity to testify before the Department of Telecommunications and Energy (the "Department") prior to my participation in this case. However, I have testified before the New York State Public Service Commission in several ratemaking and regulatory proceedings.

Q. What is the purpose of your testimony?

A. I am testifying on behalf of Boston Gas on the calculation of the revenue requirement and existing revenue deficiency. As described in the testimonies of Mr. Bodanza and Dr. Kaufmann, the Company is proposing to implement a new performance-based ratemaking plan (the "PBR Plan") to cover a five-year term commencing November 1, 2003. The revenue requirement established in my testimony will serve as the basis for the "cast off" rates under the PBR Plan, which will be adjusted in each year of the PBR Plan through the application of a

price-cap formula, with the first adjustment taking effect on November 1, 2004 and the last taking effect on November 1, 2008 (unless the plan is extended).

Q. How did you establish the revenue requirement for initial rates under the Company's proposed PBR Plan?

A. As in the Company's last base-rate proceeding, Boston Gas Company, D.P.U. 96-50 (Phase I) (1996) ("D.P.U. 96-50"), the Company is proposing to establish initial or "cast off" rates based on traditional cost-of-service principles. To develop the revenue requirement, the Company used historical test year data for the 12-month period ending December 31, 2002, adjusted for known and measurable changes. Based on this data, the Company has calculated a total cost of service of $673,509,118 and gas operating revenues of $612,204,751, resulting in a revenue deficiency of $61,304,367. This represents a revenue increase of approximately 9.59 percent on the total bill for the average customer.

Q. Please describe the exhibits attached to your testimony.

A. Exhibit KEDNE/PJM-2 sets forth the work schedules calculating the Company's revenue deficiency. Backup workpapers supporting the schedules presented in Exhibit KEDNE/PJM-2 are provided herewith in Exhibit KEDNE/PJM-2 [SUPP.]. Additional documentation in support of my testimony is provided in the following exhibits:

KEDNE/PJM-3	Boston Gas/Service Company Agreement
KEDNE/PJM-4	Insurance Premium Invoices
KEDNE/PJM-5	Advertising Invoice Summary

KEDNE/PJM-6	Property Tax Invoice Summary
KEDNE/PJM-7	Lead/Lag Study
KEDNE/PJM-8	Non- Revenue-Producing Investments (1996-2002)
KEDNE/PJM-9	Aggregate Returns on Revenue Producing Investments
KEDNE/PJM-10	Revenue-Producing Investments over $100,000 (1996-2002)

Q. How is your testimony organized?

A. As stated above, my testimony is designed to establish the cast-off revenue requirement and to demonstrate that the calculation of the revenue deficiency is consistent with Department ratemaking principles. To that end, the remainder of my testimony is organized into the following three sections. Section II describes the adjustments for known and measurable changes in the test-year cost of service. Section III describes the Company's capital structure and calculates the return on rate base, and Section IV reviews the Company's investments in distribution-system infrastructure for system reliability, safety, and growth.

II. TEST-YEAR ADJUSTMENTS

Q. How is Exhibit KEDNE/PJM-2 organized?

A. Exhibit KEDNE/PJM-2 begins with the Revenue Deficiency Summary for the test-year ended December 31, 2002. The Operating Revenue Summary is set forth on page 2, with Adjustments to Gas Operating Revenues listed on page 3. The Cost of Service Summary provided on page 4 identifies test-year amounts for

the cost of gas, operations and maintenance expense, depreciation, amortization, taxes other than income, rate base and return on rate base. The Cost of Service Summary also shows the total adjustments to the test-year amounts. Adjustments to Operating and Maintenance Expenses based on known and measurable changes to the test year are itemized on page 5. Supporting schedules are provided in the remainder of the exhibit.

Q. Are the costs that the Service Company incurs to perform services for Boston Gas reflected in the Company's Cost of Service calculation?

A. Yes. As discussed in the testimony of Mr. Bodanza, the Service Company provides administrative, corporate and management services to Boston Gas. Therefore, where applicable, the Service Company charges to Boston Gas are incorporated into the operation and maintenance expense categories included in the test-year cost of service. In addition, the test-year adjustments that I will review below incorporate any Service Company charges in the same cost categories, to the extent that those Service Company charges also represent known and measurable changes to the test-year cost of service under Department precedent.

Q. How are Service Company charges presented to Boston Gas?

A. Each month a Service Company bill is prepared and presented to Boston Gas. The bill contains the cost center (department), project/activity and cost type, as well as the amount charged to Boston Gas for each function.

Q. Are these charges presented to Boston Gas in conformance with a service agreement?

A. Yes. The agreement between the Service Company and Boston Gas (the "Service Company Agreement") for the test year ending December 31, 2002, as amended, is included as Exhibit KEDNE/PJM-3. As indicated in the testimony of Mr. Bodanza, the Service Company Agreement identifies the services that will be provided to Boston Gas and references the cost-allocation formulas that will be applied to calculate the charges presented each month to Boston Gas. The provisions of the Service Company Agreement, including the cost-allocation formulas, are in conformance with Securities and Exchange Commission ("SEC") requirements.

Q. What is the total amount of post-test year adjustments to Gas Operating Revenues?

A. The Company has reduced Gas Operating Revenues by $26,905,851 as a result of post-test year adjustments made under Department precedent. These adjustments are listed in Exhibit KEDNE/PJM-2, at pages 2-3, and discussed in detail in the testimony of Ms. Leary.

Q. What is the total amount of post-test year adjustments to the Cost of Gas?

A. The Company has reduced the total Cost of Gas by $46,891,270 as a result of post-test year adjustments made under Department precedent. These adjustments are listed in Exhibit KEDNE/PJM-2, at page 4, and discussed in detail in the testimony of Ms. Leary.

Q. Has the Company made any post-test year adjustments to Operations and Maintenance expense?

A. Yes. The Company has increased the test-year cost of service by $51,321,446 for known and measurable changes in O&M expense levels. Each adjustment is discussed below in the order presented on Exhibit KEDNE/PJM-2, at page 5.

Q. Please explain the Company's adjustments to test-year payroll expense.

A. Adjustments to the Company's test-year payroll expense for union and non-union employees are shown on Exhibit KEDNE/PJM-2, at pages 6-7. Consistent with Department precedent, the Company is adjusting payroll expense to reflect known and measurable changes that will take effect through the midpoint of the rate year, which is April 30, 2004. The details of the known and measurable changes to the test-year cost of service are discussed in the testimony of Mr. Orlando. In general, the adjustments are designed to: (1) annualize test-year payroll costs to reflect wage and salary increases that became effective during the test year; (2) incorporate payroll increases that became effective April 1, 2003; and (3) incorporate payroll increases taking effect prior to the midpoint of the rate year, April 30, 2004. The adjustments relate both to direct-charge union and non-union payroll and the payroll expense allocated to Boston Gas from the Service Company. Direct payroll expenses are those expenses associated with employees who work only for Boston Gas, such as Field Supervisors and other operating personnel. Allocated payroll expenses are those expenses associated with Service

Company employees (both in Massachusetts and New York) who perform services for Boston Gas.

Q. Would you review the payroll adjustments relating to union personnel?

A. As discussed in the testimony of Mr. Orlando and shown on Exhibit KEDNE/JCO-2, the Company committed to union payroll increases that took effect during the test year, and therefore need to be annualized for the test year, as well as increases taking effect in 2003 and prior to the midpoint of the rate year in 2004. The union payroll increases included in the adjustment shown on Exhibit KEDNE/PJM-02, at page 6, are summarized as follows:

Union	Wage Increases in 2002	Wage Increases in 2003	Wage Increases in 2004
Local 12003	03/18/02 – 3.00%	03/17/03 – 3.00%	3/15/04 – 3.00%
Local 12012-04	03/18/02 -- 3.00%	03/17/03 – 3.00%	3/15/04 – 3.00%
Local 318	05/20/02 -- 3.00%	05/19/03 – 3.00%	-----
Local 343/350	06/26/02 -- 3.00%	06/25/03 – 3.00%	-----
Local 1381	02/14/02 -- 3.75%	02/14/03 – 3.75%	-----
Local 101	10/16/02 – 3.50%	10/16/03 – 3.75%	-----
Local 3	10/16/02 – 3.50%	10/16/03 – 3.75%	-----
Local 1049	02/14/02 – 3.75%	02/14/03 – 3.75%	-----

Based on these increases, the Company has adjusted test-year payroll expense for union employees by $263,364 to annualize the 2002 payroll expense increase. The Company has also adjusted test-year payroll expense by $1,090,218 for 2003, and $924,541 for 2004, to reflect the terms of currently effective collective-bargaining agreements with union employees. Similar adjustments are made for

union payroll expense allocated to Boston Gas from the Service Company totaling $551,998. In total, the adjustment to test-year payroll expense for union employees is $2,830,121.

Q. Would you review the payroll adjustments relating to non-union personnel?

A. As further described in the testimony and accompanying exhibits of Mr. Orlando, the Company's non-union employees received a merit increase of 2.75 percent in New England, and 3.75 percent in New York, effective April 1, 2002. In addition, on October 1, 2003, non-union employees will receive an annual increase of 3.5 percent in New England and 4.5 percent in New York. On Exhibit KEDNE/PJM-2, at page 7, I have calculated adjustments to test-year non-union payroll expense to account for these known and measurable changes. As shown therein, the Company made an adjustment of $33,272 to annualize the increase for 2002, and an adjustment of $174,974 to incorporate the increase that will become effective on October 1, 2003 for Boston Gas employees. Therefore, total adjustments for direct non-union payroll expense are $208,246. Similar adjustments are made for non-union payroll expenses allocated to Boston Gas from the Service Company totaling $1,200,396. Therefore, the total test-year adjustment for non-union payroll is $1,408,642.

Q. Please explain the adjustment that is made to incentive compensation.

A. The Company's incentive compensation plan is described in the testimony of Mr. Orlando. As described therein, incentive compensation represents the

variable portion of the wages and salaries paid to union and non-union employees serving the Company. Incentive compensation is paid to employees in March for performance in the prior year based on fixed performance criteria and compensation guidelines. With respect to the amount of incentive compensation paid, the Incentive Plan establishes a pay-out scale for each performance goal. If performance goals or "targets" are met for the annual performance period, employees receive 100 percent of the target pay-out amount. In addition, a minimum acceptable level, or "threshold," is established for each performance goal, as well as a "maximum." For performance at the threshold level, the incentive pay-out is 50 percent of the target-incentive level, and if performance is at or above the maximum, the pay-out is two times the target level. Pay-outs are prorated to the extent that performance falls within this bandwidth In Exhibit KEDNE/PJM-2, at page 8, the Company has adjusted test-year incentive compensation expense to reflect the target incentive compensation applicable to wages paid in 2002. This is accomplished in three steps.

First, in 2001, the Company recorded an accrual for incentive compensation expense to reflect the liability associated with incentive compensation due to union and non-union employees for 2001 performance. In 2002, the actual incentive compensation expense for 2001 was calculated to be less than the accrued amount by $2,097,330. Therefore, in 2002, the Company reversed the over accrual by making an entry to reduce incentive compensation expense by

$2,097,330. As a result, to calculate properly the test-year expense for inclusion in rates, the Company needed to increase test-year incentive-compensation costs by $2,097,330, which eliminates the effect of the entry made in 2002 to correct for 2001 expense levels.

Second, the Company reduced test-year incentive compensation expense by $13,866 to reflect the Company's target liability for performance in 2002. This amount represents the difference between the $1,125,741 initially recorded as an accrual on the Company's books in 2002, and the target incentive-compensation expense of $1,111,875 for Boston Gas employee performance in 2002. The average incentive pay-outs for employee performance in 2002 actually exceeded the 100% target level. However, as discussed in the testimony of Mr. Orlando, the target level of compensation is more representative of the Company's incentive-compensation expense over time, and therefore, the Company has reduced the test-year expense level to reflect the target-level incentive.

Third, the Company increased test-year incentive compensation expense by $158,257 to reflect the Company's liability for incentive compensation due to Service Company employee performance in 2002. This amount represents the difference between the $17,305,603 initially recorded as an accrual on the Service Company's books in 2002, and the $18,300,930 that is the incentive target level for 2002. The total adjustment in the test year for the Service Company is $995,327, of which 15.90 percent (or $158,257) is allocated to Boston Gas based

on the proportion of Service Company labor costs charged to the Boston Gas cost of service.

The net of these three adjustments is $2,241,721. However, the majority of this amount represents an "accounting" adjustment that does not affect the revenue requirement. The net effect on the revenue requirement is $144,391, or the adjustment of $158,257 to increase the test-year expense to reflect target incentive-compensation levels for Service Company employees, less the reduction of $13,866 relating to direct employees.

Q. Please explain the test-year adjustment made to standardize the variable pay structure for KeySpan employees.

A. As described in the testimony of Mr. Orlando, KeySpan is nearing completion of a three-year transition plan to standardize the wage and salary structure for non-union employees of the regulated gas distribution companies in Massachusetts and New York. The payroll structure for non-union employees is composed of a base-salary component and a variable component. To achieve the standardized structure, payroll increases for Boston Gas non-union employees are less than the payroll increases in New York, while the percentage of incentive compensation for Boston Gas non-union employees is increasing. The calendar year ending December 31, 2003 represents the final year of the transition plan. In accordance with the plan, base wages for Boston Gas non-union employees will increase in 2003 at a rate that is 1 percent less than the increase for New York non-union employees. This difference is also discussed in the testimony of Mr. Orlando.

To reflect this known and measurable change, the Company has made an adjustment to increase test-year target incentive-compensation costs in the amount of $297,372, which represents $211,192 associated with Service Company non-union employees and $86,180 associated with Boston Gas non-union employees (both adjustments exclusive of capitalized amounts). Of the total compensation adjustment for the Service Company, $434,343, or approximately 68.10 percent, is allocated to Boston Gas based on the Massachusetts formula of revenues, assets and O&M expense, excluding the cost of gas. These calculations are presented in Exhibit KEDNE/PJM-2, at page 9.

Q. Could you please explain the adjustment made to test-year dental expense?

A. The Company has adjusted the test-year dental expense by $51,432 to reflect known and measurable increases in costs for dental coverage for both union and non-union employees in 2003. These increases are reviewed in the testimony of Mr. Orlando. As described therein, the Company determined the total amount of the test-year adjustment based on an analysis of cost increases by plan and by individual employee. The annualized dental expense for 2003 is $747,859 for direct Boston Gas employees and $281,087 for Service Company employees. This results in an increase to the test-year cost of service of $51,432 for direct and allocated employees, as shown in Exhibit KEDNE/PJM-2, at page 10.

As shown in Exhibit KEDNE/PJM-2, at page 10, the total percentage increase varies between direct and Service Company employees because the principal

determinant of dental-coverage expense is the level of copayment required by the employee. Direct employees are generally covered under collective bargaining agreements that set requirements for the level and type of coverage, as well as the amount of the employee copayment.

Q. Please explain the adjustment to the Company's test-year health care expense.

A. The Company has adjusted its test-year health care expense to reflect known and measurable increases in medical-insurance premiums for 2003. The premium increases are reviewed in the testimony of Mr. Orlando. As described therein, the Company determined the total amount of the test-year adjustment based on an analysis of premium increases by plan and by individual employee. As shown in Exhibit KEDNE/PJM-2, at 11, the premiums for healthcare insurance increased by 13.21 percent on average, or $771,197, for direct employees and 12.10 percent on average, or $357,305, for Service Company employees, for a total adjustment of $1,128,502.

Q. Please explain the Company's adjustment to the test-year pension expense.

A. As discussed in the testimony of Mr. Bodanza, the Company is proposing a mechanism to deal with the unusual circumstances confronting the Company today in terms of pension costs. In the test year, the Company recorded pension expense in accordance with Financial Accounting Standard No. 87 ("FAS 87") of $6,230,016. The Company is proposing to adjust the test-year level of pension

expense by $11,855,419, consistent with Department precedent and the discussion provided by Mr. Bodanza.

In the past, the Department has consistently found that, because there is considerable variation in a company's annual pension contribution levels, it is appropriate to include a representative level of pension cost in the test-year cost of service rather than using only the test-year amount. As discussed in the testimony of Mr. Bodanza, unusual circumstances in the financial markets are causing extreme volatility in both the level of FAS 87 expense recorded on the Company's books and the amount of cash contributions made to the pension plan. In the past, the ratio of the Company's actual pension plan funds to projected liabilities was sufficient so that no cash contributions were necessary in those years. However, the funding status of the pension fund has deteriorated significantly, causing the Company to make contributions in 2001 and 2002 of $19,000,000 and $44,460,083, respectively.

In this case, the Company is proposing to apply a 3-year average (2000-2002) of actual cash contributions to the pension plan to develop the annual amount for inclusion in rates because it is more representative of the annual expense that the Company will incur in the future. Under this methodology, the average annual cash contribution amount would be $21,153,361, of which $18,085,435, would be included in rates ($17,180,551 for direct employees and $904,884 for Service Company employees), with the remainder capitalized. Since the actual test-year

expense recorded on the Company's books was $6,230,016, an adjustment of $11,855,419 must be added to the test-year amount, with the total adjusted test-year amount subject to the reconciliation mechanism discussed in the testimony of Mr. Bodanza.

Q. Please explain the adjustment to the test-year cost of service for insurance expense.

A. To establish the appropriate level of insurance expense, the Company has performed a policy-by-policy evaluation to compare the premium costs associated with each insurance policy in the test year to the premium costs for each policy that has been renewed for 2003. The premiums are listed in Exhibit KEDNE/PJM-2, at page 13, and the invoices documenting the premium increases are provided at Exhibit KEDNE/PJM-4. These increases represent known and measurable changes resulting from the renewal and annualization of premium costs not reflected in the test year. The insurance-premium costs allocated to Boston Gas by the Service Company were separately calculated based on applicable allocation percentages, which vary by policy type. The allocation percentages are designed to be consistent with the nature of the insurance cost being allocated (e.g., general liability insurance premiums are allocated based on the number of employees). In total, the Company has increased test-year insurance expense by $556,705.

Q. Please describe the adjustment for property leases.

A. The Company is proposing to adjust the test-year level of lease expense for two reasons: (1) to annualize the effect of cost changes that occurred during the test year; and (2) to recognize changes in specific properties being leased by the Company. These adjustments are set forth in Exhibit KEDNE/PJM-2, at page 14. First, the Company has annualized the increase in lease expense associated with the liquefied natural gas ("LNG") tanks in Lynn and Salem, Massachusetts, which became effective on July 1, 2002. This adjustment totals $205,456. Second, during 2002, the Company terminated its lease at One Beacon Street, Boston and Morse Street, Norwood, in order to consolidate its offices at 51 Second Avenue, Waltham. Therefore, the Company has reduced the test-year lease expense for the Beacon Street and Norwood facilities by $502,565 and $222,248, respectively, and increased the test-year expense to reflect the annualized expense for the Waltham facility that is allocated to Boston Gas, or $1,560,619. Lease expenses are allocated to Boston Gas consistent with the allocation percentages previously used for the Beacon Street and Morse Street facilities. As a result, the total property lease adjustment to the test-year cost of service is $1,041,262.

Q. Please explain the adjustment for the net gain associated with the sale of utility property.

A. Until 1998, the Company owned a 7-acre parcel of land and a building on Main Street in Concord, Massachusetts (the "Concord Property"). The Concord Property consisted of both utility property and property held for future use, in that

the building and equipment housed utility operations and the land surrounding the building was held by the Company for future use. In 1998, the Company sold the Concord Property and realized net proceeds of $1,279,700 (or sale proceeds of $1,436,570, less the net book value of the building and equipment of $156,870. The Company allocated 16.60 percent of the proceeds to utility operations based on the ratio of the square footage used as utility property to the total square footage, including the property held for future use. Therefore, the net gain resulting from the sale allocated to utility property is $212,430, less the book value of the land underlying the facility of $9,950. This resulted in a net gain of $202,480. Consistent with Department precedent, the Company is proposing to amortize this amount over the 5-year period of the PBR plan in order to return to customers the gain on the utility property. This adjustment results in a reduction to the test-year cost of service of $40,496. This adjustment is set forth on Exhibit KEDNE/PJM-2, at page 15.

Q. Please explain the adjustment to the test-year postage expense.

A. The Company adjusted its test year postage expense of $2,423,592, to annualize the 10.83 percent increase in postal rates that became effective on July 1, 2002. This results in an increase to the test-year cost of service of $124,491. This adjustment is presented on Exhibit KEDNE/PJM-2, at page 16.

Q. Please explain the adjustment to the Company's test year amount for its strike contingency costs.

A. In the event of a labor strike, it is imperative that the Company be prepared to continue to operate and to meet customer requirements. For that purpose, the Company incurs incremental strike costs such as: (1) hiring of outside contractors to train non-union staff on the use of critical equipment necessary to ensure the continuation of safe operations; (2) initiation of a customer communication program; and (3) implementation of security measures (e.g., changing locks to secure Company assets, fencing installation, communications equipment and hiring security personnel). The Department has found that strike contingency expense is a recurring expense properly included in a company's cost of service. The Berkshire Gas Company, D.T.E. 01-56, at 66 (2002).

In 2002, the Company's largest union was engaged in contract discussions with the Company creating the possibility of a work stoppage. In total, the Company incurred incremental strike costs of $321,865, which were deferred in order to be amortized for recovery over the term of the collective bargaining agreement. Consistent with Department precedent, the Company has normalized this strike contingency amount over 4 years, which is the length of the union contract, and has increased the test-year cost of service in the amount of $80,466, as shown on Exhibit KEDNE/PJM-2, at page 17.

Q. Please explain the Company's incremental cost adjustments associated with Colonial Gas Company.

A. The Department approved the merger of Eastern Enterprises and Essex Gas Company ("Essex") in Eastern-Essex Acquisition, D.T.E. 98-27 (1998) and the subsequent merger of Eastern Enterprises with Colonial Gas Company ("Colonial") in Eastern-Colonial Acquisition, D.T.E. 98-128 (1999). Consistent with the rate freeze put in place by those decisions, the Department provided that only incremental costs incurred by Boston Gas for service provided to Essex or Colonial would be assigned to those companies. See, D.T.E. 98-27-A at 4-5; D.T.E. 98-128, at 88. In parallel, as described in the testimony of Mr. Bodanza, all costs incurred by the Service Company are allocated to the operating companies being supported by the Service Company in accordance with SEC regulations.

Since the Department has determined that, for ratemaking purposes, only costs that are incremental to Boston Gas are allocated to Colonial and Essex, it is necessary to adjust the Boston Gas test-year cost of service to include costs that were allocated to Colonial or Essex during the test year under the SEC formula, but were not incremental to the operations of Boston Gas. Stated differently, except for the incremental costs involved in serving Colonial and Essex, the Service Company's costs are incurred to support Boston Gas operations. This is because Boston Gas was providing services to Colonial and Essex on an embedded cost basis prior to the merger with KeySpan Corporation. Therefore,

for ratemaking purposes, all costs incurred to support the Boston Gas operations are allocated to Boston Gas and only incremental costs directly attributable to the Colonial and Essex operations are allocated to those companies.

Consistent with the terms of the Department's order in D.T.E. 98-128, the Company has increased the test-year cost of service by $7,256,297 to account for costs that were allocated to the Colonial Gas operations pursuant to the SEC allocations, but did not represent "incremental" costs to Boston Gas. These costs relate to operational and management activities that fall into the following categories: (1) corporate management and administration; (2) finance; (3) human resources; (4) information technology; (5) engineering and gas-supply planning; and (6) legal and regulatory. See D.T.E. 98-27, at 58-59; D.T.E. 98-128, at 84-85 and 88-89. This adjustment is shown in Exhibit KEDNE/PJM-2, at page 18.

Q. Have you made a similar adjustment for costs allocated to Essex?

A. A similar adjustment for Essex Gas is not necessary because the Service Company allocation formulas do not recognize Essex as an independent entity because of its relative size and level of integration into the Boston Gas operations. However, in accordance with the Department's directives in D.T.E. 98-27-A, the Company has allocated costs that are incremental to Boston Gas from the Service Company to Essex Gas. These incremental allocations total $1,410,650, but since these costs are allocated to Essex directly from the Service Company, there is no

need to make an adjustment to the Boston Gas test-year cost of service to account for these allocations.

Q. Please explain the severance adjustment.

A. In 2000, the Company implemented a severance program targeted at achieving workforce reductions. In that year, the Company booked an accrual to reflect the liability associated with the severance program. In 2002, the Company determined that the accrual exceeded the actual cost, and as a result, made an entry on the books in 2002 to reverse the remaining liability of $250,000, which reduced O&M expense by $250,000. Accordingly, as shown on Exhibit KEDNE/PJM-2, at page 19, the Company has increased its test year O&M expense by $250,000 to eliminate the effect of this reversal.

Q. Has the Company included an adjustment to recover rate-case expenses in this filing?

A. Yes. As shown on Exhibit KEDNE/PJM-2, at page 20, the Company has estimated the total rate case expense to be $1,665,289, this includes the cost of researching, preparing and litigating this filing through the compliance phase of the proceeding.

Q. What services are included in the Company's proposed rate-case expense?

A. The Company's proposed rate-case expense includes expenses associated with the following services: (1) legal representation; (2) research and preparation of a productivity and cost study to support the price-cap component of the Company's PBR plan; (3) research and preparation of the cost of capital analysis; (4) the

preparation of a lead/lag study; and (5) other associated costs that will be incurred to complete the case, such as temporary help, office supplies and travel expenses.

Q. How will the Company determine the final amount of rate case expense to be included in base rates?

A. In addition to the expenses already incurred, the Company will incur additional expenses over the next several months as this filing is being reviewed by the Department. The Company will also incur expenses to complete the compliance phase of this proceeding. Therefore, consistent with Department precedent, the Company will provide invoices and other documentation of actual rate-case expenses incurred up until the point that the evidentiary record is closed. The invoices provided by the Company for all outside services will document the number of hours billed, the billing rate, and the nature of the services provided. In addition, the Company is prepared to document the fixed-fee arrangements for professional services involved in the compliance phase of the proceeding.

Q. Has the Company amortized the rate-case expense consistent with Department precedent?

A. Yes. The Department's practice in determining the amount of rate-case expense to be included in rates is to normalize these expenses so that a representative annual amount is included in the test-year cost of service. In D.P.U. 96-50, the Department found that, where a company is subject to a price-cap plan, and the term of the price cap plan exceeds the average period between a company's three most recent rate cases, the Department will use the term of the price cap plan in

establishing the amortization period for rate-case expense. Accordingly, the Company has amortized the rate-case expense over the five-year period of the PBR Plan. As shown in Exhibit KEDNE/PJM-2, at page 20, this calculation results in an annual expense amount of $333,058, which is the test-year adjustment that the Company is proposing in this case.

Q. Could you identify the outside consultants and legal representatives providing service to the Company in this proceeding.

A. Yes. To prepare this filing, the Company retained the services of Keegan, Werlin & Pabian, LLP as legal and regulatory counsel. The Company also retained the services of Dr. Lawrence Kaufmann, Pacific Economics Group, for the preparation of the productivity analyses and related price-cap issues, as well as the services of Paul J. Moul, for the cost-of-capital analysis.

Q. Did the Company engage in a competitive bidding process to retain the services of the consultants and legal representation participating in this case?

A. Consistent with Department precedent, the Company did not engage in a competitive bidding process to secure outside services to support the Company in this proceeding because the consultants and legal representatives involved in this case are in the best position to provide the Company with cost-effective services. For example, Keegan, Werlin & Pabian, LLP has a longstanding working relationship with the Company and its distribution company affiliates and has a thorough knowledge of the Company's finances, operations and ratemaking practices. The firm has represented the Company in several major proceedings

before the Department, including proceedings approving the mergers of Eastern Enterprises with Essex and Colonial. In addition, the firm has in-depth experience with utility rate and regulatory issues. The combination of these factors will ensure that the Company is prepared to complete the proceeding in a cost-effective manner.

Similarly, the consultants retained by the Company to prepare this filing have longstanding relationships with the Company, as well as substantial expertise in utility ratemaking issues. Specifically, Dr. Kaufmann was involved in the development of the productivity analysis supporting the Company's PBR proposals in D.P.U. 96-50, and therefore, is uniquely situated to perform the studies and analyses needed to update the 1996 study, which involves the use of a proprietary database and modeling routine. Likewise, Mr. Moul has assisted the Company in past rate cases and is knowledgeable about the Company's operations and finances. Mr. Moul has also testified on behalf of other utilities in the Commonwealth, and therefore, is well-versed in the Department's precedent and ratemaking approach. Accordingly, the Company believes that its decision to retain the services of these outside consultants and legal representatives without the use of a competitive bid process was both appropriate and reasonable.

Q. Please explain the adjustment that is made to the test-year cost of service for costs recovered through the Cost of Gas Adjustment factor.

A. In D.P.U. 96-50, the Department unbundled certain costs from the Company's base rates to allow for the recovery of gas-supply related local production and

storage, gas procurement and bad-debt costs through the Cost of Gas Adjustment ("CGA") factor. When incurred, these costs are recorded as O&M expenses (i.e., local production and storage expense and bad-debt expense) on the Company's books. However, in order to recover these costs during the year through the CGA, the Company makes an adjustment on the books to reduce (credit) O&M expenses and to increase (debit) the cost of gas by the amount of these expenses.

Therefore, to establish appropriate base rates in this case, the Company must exclude from the test-year O&M expense the effect of the accounting entry to move these costs into the cost of gas for recovery through the CGA. Specifically, the Company adjusted test-year O&M expense by $25,588,070 to eliminate the effect of the O&M expense credit. This adjustment is set forth in Exhibit KEDNE/PJM-2, at page 21.

Q. Does this adjustment affect the calculation of the revenue requirement?

A. No, as is the case with other "accounting" adjustments that the Company is making to reverse accruals for incentive compensation and severance costs, there is no net effect on the revenue requirement. The adjustment increases test-year O&M expense in Exhibit KEDNE/PJM-2, at page 21, and a corresponding adjustment is made to reduce the test-year cost of gas, as shown on Exhibit KEDNE/PJM-2, at page 4. This adjustment is also discussed in the testimony of Ms. Leary.

Q. Please describe the bad-debt expense adjustment.

A. During the year, the Company estimates its bad-debt expense based on revenue levels and trends in the historical write-off percentages. For purposes of calculating the uncollectible-account expense to be included in the test-year cost of service, the Company first compared its net write-offs to firm billable revenue for the three years ended December 31, 2002 and derived the three-year weighted average of net write-offs as a percentage of billable revenue. This calculation is shown on Exhibit KEDNE/PJM-2, at page 22. The Company then took the normalized firm-sales revenues in the test year and multiplied it by the three-year weighted average to compute the bad-debt expense allowance of $11,203,982. The test year bad-debt expense of $15,503,342 was subtracted from the bad-debt expense allowance, which results in a reduction to test-year O&M expense of $4,299,361. An additional bad-debt expense of $1,115,739 results from the proposed rate increase, as shown on the Revenue Deficiency Summary provided at Exhibit KEDNE/PJM-2, at page 1.

Q. Please explain the lobbying expense adjustment.

A. The Department has previously found that certain activities performed by the American Gas Association (the "AGA") are within the category of lobbying and lobbying-related activities. Accordingly, the Company has removed the portion of AGA dues that are attributable to lobbying activity, as well as all other direct and allocated lobbying expenses that were not recorded below the line in the test

year. In total, the Company has reduced the test-year cost of service by $13,247, as shown in Exhibit KEDNE/PJM-2, at page 23.

Q. What adjustment has the Company made for advertising expense?

A. As shown on Exhibit KEDNE/PJM-2, at page 24, the Company incurred advertising expenses of $1,751,879 during the test year. As required by Department precedent, the Company first categorized its test-year advertising expenses into four groupings designated by the Department. The Company then eliminated advertising expenses not recoverable in rates under Department precedent, such as certain types of image and promotional activities. In total, the Company deducted $641,204 from the total test-year expense. A summary of the advertising invoices included in the test-year expense amount and proposed for inclusion in rates are included as Exhibit KEDNE/PJM-5.

Q. Please explain the adjustment to the test-year cost of service for fines and penalties.

A. The Company has reduced the test-year cost of service by $71,150 to adjust for fines and penalties that were incurred in the test-year but are not includable in rates under Department precedent. This adjustment is set forth in Exhibit KEDNE/PJM-2, at page 25.

Q. Please explain the adjustment to the test-year cost of service in accordance with Department precedent.

A. The Company has reduced the test-year cost of service by $1,445,365, to reflect costs that were properly allocated to the Company by the Service Company, but

are not includable in rates under Department ratemaking precedent. These adjustments are set forth in Exhibit KEDNE/PJM-2, at page 26. These costs include corporate-sponsored memberships, branding and strike contingency expenses incurred by the Service Company. These costs are charged to the Boston Gas operations under the appropriate allocation formulas but have been removed from the test-year cost of service consistent with Department precedent.

Q. What amount of charitable contributions are included in the Company's test year cost of service?

A. In the test year, the Company made charitable contributions of $303,268, which were recorded on the Company's books "below the line." As shown on Exhibit KEDNE/PJM-2, at page 27, no further adjustment to the test year cost of service has been made for charitable contributions.

Q. Please explain the Company's adjustment for inflation.

A. Consistent with Department precedent, the Company calculated the applicable inflation adjustment based on the increase in the Gross Domestic Product -- Implicit Price Deflator from the midpoint of the test year to the midpoint of the rate year. This calculation resulted in an inflation factor of 5.25 percent, as shown on Exhibit KEDNE/PJM-2, at page 28-29. The Company applied this inflation factor to its residual O&M expenses of $53,118,261, resulting in a total inflation adjustment of $2,788,709. The Company's residual O&M expense includes only those expenses not separately adjusted.

Q. Please describe the depreciation expense adjustment.

A. As shown on Exhibit KEDNE/PJM-2, at page 30, the Company recorded depreciation expense of $52,397,887, during the test year. The Company calculated its annual depreciation expense by applying the depreciation accrual rates approved by the Department in Boston Gas Company, D.P.U. 93-60 (1993) to the test year-end plant balances for depreciable plant accounts. The test year-end utility plant in service was reduced by items that are not in rate base, such as construction work in progress and property held for future use, as well as certain plant-in-service categories that are amortized or are not subject to physical depreciation, such as software, leasehold improvements, capital leases and land. The difference between the computed depreciation expense based on year-end plant in service of $54,833,519 and the depreciation expense recorded during the test year of $52,397,887, results in an adjustment for depreciation expense of $2,435,632.

Q. When did the Company last perform a depreciation study on its plant-in-service accounts that was reviewed by the Department?

A. The Company's last depreciation study was conducted in 1992 by James H. Aikman, Vice President and Treasurer of Management Resources International, Inc. The results of that study were reviewed by the Department in D.P.U. 93-60 and served as the basis for the modifications made in that proceeding to the Company's depreciation accrual rates.

Q. Is the Company proposing to make any modifications to its annual depreciation expense in this proceeding?

A. No, the Company is not proposing any modifications to its depreciation accrual rates in this proceeding. As stated above, the Company used the depreciation accrual rates established by the Department in D.P.U. 93-60 because there has been no change in the average service life of the mains and materials that were included in the depreciation study performed by Mr. Aikman.

Q. Did the Company's 1992 depreciation study take into account the type of material used for the mains and services being installed by the Company?

A. Yes. The Company's 1992 depreciation study accounted for the various types of materials being used by the Company, which included bare steel, cast-iron and plastic mains.

Q. Would there be any benefit in the Company performing a study of the percentage of plastic pipe installed on the Company's system?

A. No, there would not be any benefit in performing such a study. In D.P.U. 93-60, the Department adopted the same 82-year average service life estimate for cast iron, bare steel and plastic mains. Therefore, the relative percentage of plastic mains being installed by the Company would have no affect on the Company's approved depreciation accrual rates or its annual depreciation expense.

Q. Please explain the adjustments to the amortization of leasehold improvements and intangible plant.

A. As shown on Exhibit KEDNE/PJM-2, at page 31, the Company adjusted test-year amortization expense by $9,546 to annualize the Rivermoor, Lynn/Salem and

Waltham leasehold improvements and to eliminate the amortization of leasehold improvements at Beacon Street. The Company also adjusted test-year amortization of intangible plant, which is comprised of four items. The first adjustment in the amount of $1,180,803, is to annualize the amortization of the customer information system, which was implemented on July 1, 2002. The second adjustment in the amount of $222,049 is to annualize the amortization of all other information-system software excluding the customer system.

The third and fourth adjustments are related to the "incremental accounting" adjustment discussed above. Specifically, the Company has reduced the amortization expense by $179,482, to reflect costs associated with the Customer-Related Information System ("CRIS") that are attributable to the Essex operations and are incremental to Boston Gas. In addition, the Company has increased the amortization expense by $162,140 for software costs (Oracle Financial Project, PeopleSoft System and Financial Data Warehouse) allocated to Colonial under the SEC allocation formula, but not representing incremental costs for Boston Gas.

The total adjustment for amortization expense is $1,395,056, which represents the difference between the annual amortization amounts that should have been recorded on the Boston Gas books and the amounts actually recorded on the Company's books in the test year.

Q. Please explain the adjustment for taxes other than income taxes.

A. The Company has made two adjustments for taxes other than income taxes to account for known and measurable changes: (1) an adjustment to annualize increases in property taxes; and (2) an adjustment to modify the Company's payroll tax liability.

Q. Please explain the property tax adjustment.

A. The Company has increased the test-year cost of service to address two changes in property tax, as shown on Exhibit KEDNE/PJM-2, at page 32. First, the Company received property tax bills as of November 1, 2002, that totaled $15,718,022 on an annual basis. A summary of these bills by city and town is provided in Exhibit KEDNE/PJM-6. In addition, the Company intends to provide supplemental documentation to the Department to account for additional property tax bills received prior to the close of the record for this proceeding.

Second, the Company reduced the cost of service by $88,004 to account for the removal of property taxes associated with non-utility property and property held for future use. A summary of the properties associated with this change is included at Exhibit KEDNE/PJM-6. The test-year property expense amounted to $13,679,000. Therefore, in combination, these two adjustments result in an increase to the test-year cost of service of $1,951,018.

Q. Please explain the adjustment for payroll taxes.

A. The Company's payroll tax liability encompasses Medicare and Social Security taxes (referred to as Federal Insurance Contributions Act ("FICA")). Because the Company made known and measurable changes to the test-year payroll expense, a consistent adjustment is needed for the associated FICA taxes. The calculation of the payroll tax adjustment is shown on Exhibit KEDNE/PJM-2, at page 33.

The adjustments set forth in Exhibit KEDNE/PJM-2, at page 33A were calculated by first applying the Medicare tax rate to the payroll increases set forth in Exhibit KEDNE/PJM-2, at pages 6-7. The Medicare tax rate applied was 6.31 percent for direct union payroll increases, 4.19 percent for direct non-union payroll increases, 5.18 percent for allocated union payroll increases, and 5.14 percent for allocated non-union payroll increases. The increased tax liability for Social Security is calculated using the same percentages, except that the percentage applied to the non-union payroll increase is 3.57 percent to reflect the increase in the Social Security base from $84,000 to $87,000. By assuming that all non-union employees earn over the $87,000 maximum base, the overall increase of 3.57 is less than it would be if the Company employees earning less than the maximum base were taken into account.

These adjustments result in an increase to the test-year cost of service of $206,511 for direct payroll costs and $101,319 for Service Company payroll costs, for a total of $307,830.

Q. Please explain the adjustment for interest on customer deposits.

A. The test-year-end balance of customer deposits is $1,562,785. Applying the interest rate payable to customers in 2003 of 2.64 percent established by the Department, the Company has increased the test-year cost of service by $41,258 to reflect interest due on customer deposits in 2003. This calculation is set forth on Exhibit KEDNE/PJM-2, at page 34.

Q. How did the Company calculate its income-tax liability.

A. The Company's calculation of income taxes is shown on Exhibit KEDNE-PJM-2, at page 35. As shown therein, the federal income tax liability is calculated by first subtracting interest expense from Operating Income Before Taxes to determine Net/Taxable Income. The interest expense is computed by multiplying total rate base shown in Exhibit KEDNE/PJM-2, at page 38, by the weighted cost of debt. The Massachusetts franchise tax liability is calculated by applying the tax rate of 6.50 percent to the Company's Net/Taxable Income following the rate increase, which produces the state tax liability. The Company then subtracted the state tax liability from the Net/Taxable Income in order to calculate the federal tax liability. The federal tax liability is derived by applying the federal tax rate of 35.00 percent to the taxable income after state taxes of $59,574,322, for a total federal tax liability of $20,851,013. In accordance with the provisions of D.P.U. 93-60, the Amortization of Excess Deferred Taxes is then deducted from the federal tax liability, which results in a net state and federal tax liability of $24,783,138.

III. RETURN ON RATE BASE AND CAPITAL STRUCTURE

Q. Please describe the Company's capital structure.

A. As shown on Exhibit KEDNE/PJM-2, at page 36, the Company's actual capital structure at test year-end included the capitalization associated with the acquisition premium or "goodwill" allocated to the books of Boston Gas following the merger of Eastern Enterprises and KeySpan Corporation. The unamortized balance of this goodwill totaled $790,284,582, as of December 31, 2002. The capitalization associated with the goodwill existing on the Company's books is discrete and identifiable because it was transferred to the Company's books through journal entries made at the time of the merger. Therefore, the Company has removed the capitalization associated with goodwill, which is composed of $650,000,000 in debt and $140,284,582 in equity. The Company also adjusted preferred stock by $1,500,000, to reflect the upcoming redemption in September 2003. The removal of goodwill and the redemption of $1,500,000 in preferred stock results in a capital structure that is 32.01 percent long-term debt, 1.88 percent preferred stock, and 66.11 percent equity.

Because the removal of the goodwill results in a relatively high equity ratio that is atypical for utility ratemaking purposes, the Company imputed an equity component of 50 percent for purposes of calculating the weighted cost of capital. This change results in a capital structure that is 48.16 percent long-term debt, 1.84 percent preferred stock and 50 percent equity. As discussed in the testimony of

Mr. Moul, this capital structure is consistent with the capital structures of other comparable utilities and more accurately represents the historical capital structure of Boston Gas.

Q. How did the Company calculate its weighted average cost of long-term debt?

A. The Company calculated its weighted average cost of long-term debt by multiplying the amount of each outstanding long-term debt instrument by its respective coupon rate. The sum of the long-term debt interest expense was then divided by the total amount of outstanding debt to determine the weighted average cost of long-term debt. Amortization of debt-issuance expense was included in the coupon rate of each instrument. This calculation results in a weighted average cost of long term debt of 8.14 percent. This calculation is based on the long-term debt schedule set forth in Exhibit KEDNE/PJM-2, at page 37.

Q. How did the Company calculate its weighted average cost of capital?

A. The testimony of Mr. Moul, provided as Exhibit KEDNE/PRM-1, describes the methodology used to determine the Company's proposed cost of equity capital. The cost of the Company's long-term debt is 8.14 percent and the cost of preferred stock is 6.42 percent, as shown on Exhibit KEDNE/PJM-2, at page 37. As described by Mr. Moul, the cost of common equity is 12.18 percent. The underlying cost of debt, preferred stock and common equity is then multiplied by the respective share of the total capitalization to derive the Company's weighted average cost of capital. As shown on Exhibit KEDNE/PJM-2, at page 36, the

Company's weighted average cost of capital is 10.13 percent, consisting of 3.92 percent long-term debt, 0.12 percent preferred stock and 6.09 percent common equity.

Q. How did the Company determine its rate base?

A. The Company's rate base is calculated on Exhibit KEDNE/PJM-2, at page 38. The calculation starts with the total utility plant in service at the end of the test year (December 31, 2002), plus materials and supplies, prepayments and cash working capital. From that total, a series of items are deducted, including work in progress, accumulated depreciation, deferred taxes, and other elements. The net amount, as adjusted, represents the Company's test year-end rate base.

Q. What adjustments were made to the Company's test year-end rate base?

A. A summary of the adjustments made by the Company to arrive at its test-year end rate base is shown on Exhibit KEDNE/PJM-2, at page 39. As indicated, the Company has made five adjustments in calculating test year-end rate base. These adjustments result in a decrease to test year-end utility plant of $813,987,224.

First, the Company reduced its year-end utility plant in service by $812,950,019 to eliminate "goodwill," which is not considered to be utility plant in service under Department precedent. This amount, in combination with the goodwill amortization of $22,665,437 discussed below, equals the $790,284,582 in unamortized goodwill that is removed from the capital structure in Exhibit KEDNE/PJM-2, at page 36.

Second, the Company reduced test year-end rate base to account for the following changes in net utility plant that occurred during the test year: (1) to remove leasehold improvements associated with the Beacon Street property ($136,291); (2) to remove the net book value of the utility property sold in Concord, MA ($132,859); (3) to eliminate the unamortized balance of the CRIS billing system not allocated to Essex Gas per formula, but representing incremental cost to Boston Gas ($1,705,080); and (4) to add to rate base software costs that were allocated to Colonial under the SEC formula, but do not represent incremental costs to Boston Gas, consistent with the Department's findings in D.T.E. 98-128 and D.T.E. 98-27-A ($937,026).

Also shown on Exhibit KEDNE/PJM-2, at page 39 is the Company's adjustment to the Amortization of Intangible Plant in the amount of $22,665,437. This adjustment is made to eliminate the amortization associated with Goodwill.

Q. Please explain the adjustment for Other Materials and Supplies.

A. As shown on Exhibit KEDNE/PJM-2, at page 40, the Company reduced Other Materials and Supplies by $844,806, to reflect the difference between the test year-end balance and a 13-month average balance (reduced by 14.97 percent to account for materials held for use by KeySpan's other New England gas companies).

Q. Please explain the adjustment for cash working capital.

A. The Department permits companies to include in rate base a working capital component associated with O&M expenses. The Company is required to use its capital to fund these ongoing expenses as a result of the lag between the time when payments by the Company are due and the recovery of those funds is obtained from customers. The cost associated with the use of that capital is included in the Company's revenue requirement by means of the working capital allowance. Under Department precedent, the working capital allowance is derived based on the results of a lead/lag study.

Q. Did the Company conduct a lead/lag study for this proceeding?

A. Yes. The Company has conducted a lead-lag study to identify the lag between the time that the Company pays its bills and the time that it recovers costs from customers. The results of this analysis are provided at Exhibit KEDNE/PJM-7.

Q. Would you please summarize the results of that study?

A. From this study, the Company concluded that direct expenditures for Boston Gas have a lag time of 42.73 days. However, a portion of the Boston Gas operating expenditures are allocated from the Service Company, which bills Boston Gas on a monthly basis. Boston Gas is allowed 30 days to pay the Service Company for allocated expenses. Therefore, the lag time of 42.73 days for Boston Gas direct expenditures was reduced by 30 days to arrive at a 12.73 day lag for Service Company allocated expenses. The lead/lag study results in a working capital requirement of $8,028,813 for direct expenditures and $2,983,039 for allocated

expenditures. Applying the same lag factor to the Company's test year O&M expense adjustments yields additional working capital requirements of $4,803,994 and $397,644, for a total adjusted test-year working capital requirement of $16,213,491.

Q. How was the revenue lag determined?

A. Revenue lags represent the length of time between the time that the Company has extended credit for the service rendered to customers until the time payment is received from customers. The revenue lag has three components, which are: (1) the service lag; (2) the billing lag, and (3) the collection lag. The service lag represents the time from the midpoint of the period during which the service was rendered to the customer to the end of the period, or 16.48 days for firm billings and 15.21 days for non-core or non-firm billings. The billing lag was 2.12 days for firm billings, 6 days for non-core billings and 2 days for non-firm billings. In developing the collection lag, the time lag or collection lag is determined from the date the bill was mailed to the day payment was received. The collection lag was calculated by dividing the sum of the daily accounts receivable balances by the sum of daily collections. This resulted in a collection lag of 46.72 days for firm billings, 25 days for non-core billings and 20 days for non-firm billings. Thus, the total of the average lag in days for firm non-core and non-firm billings was weighted to calculate the revenue lag, or 65.05 days, as shown on Exhibit KEDNE/PJM-7.

Q. Would you explain how the expense lags were determined?

A. Expense lags occur when the Company has received credit for various services or products that have been "advanced" to the Company by its creditors. The expense lag represents the length of time between the receipt of such services and payment for the services by the Company.

Q. How are the expense categories selected for the study?

A. The most efficient method is to concentrate on the largest expense items. The categories are functionalized into their major components from the Company's O&M cost-center report. The major expenses included in the study were payroll, dental, health and life insurance, incentive-compensation programs, pensions, post-retirement benefits other than pensions ("PBOPs") and others as shown on Exhibit KEDNE/PJM-7, at page 3.

Q. Were both union and non-union payroll expenses used to determine the number of lead days for payroll?

A. For union employees, weekly payroll ends on Sunday and payday is on the following Wednesday. For non-union employees, bi-weekly payroll ends on Sunday and payday is on the following Wednesday. Lead days were calculated from the midpoint of the pay period to payday arriving at an average lead of 6.0 days for union employees and 9.50 days for non-union employees. The two lead times were weighted based on payroll and the result is an overall lead of 7.23 days as shown in Exhibit KEDNE/PJM-7, at page 3.

Q. How did you determine the lead days for rent expense?

A. The lead days for rent expense were determined by splitting the Company's cost report for rental and leasing into 12 equal monthly payments where the payment is made the first of the month for the current month, resulting in a lead payment of 14.71 days, as shown on Exhibit KEDNE/PJM-7.

Q. How did you calculate lead days for dental, health and life insurance and long-term disability and workers' compensation costs?

A. The lead days for employee-benefit expenses were calculated by examining invoices in this category on a random basis. Since all these benefits are paid on the first of the month for the current month, the lead factor of 14.73 days was applied to the remaining expenses in that category.

Q. How was the lag determined for pensions and PBOPs?

A. The Company makes these payments at the end of the year for the previous calendar year resulting in a lag payment of 182 days, which is the midpoint of the calendar year.

Q. How were all other lag days determined in the study?

A. The 401K plan was based on payroll and sample invoices were examined for incentive-compensation programs, outside legal services, police details and other O&M expenses not specifically identified.

Q. Why are uncollectible accounts included as a zero lag?

A. The lag for uncollectible accounts has been recognized in the calculation of the collection lag. The accounts receivable balance is reduced when uncollectible accounts are written off and therefore the collection lag is reduced.

Q. What are the results of the lead/lag study?

A. The actual calculation is shown on Exhibit KEDNE/PJM-7, at page 1. The revenue lag of 65.05 days is reduced by the expense lag of 22.32 days producing a net lag of 42.73 days.

IV. INVESTMENTS IN DISTRIBUTION SYSTEM INFRASTRUCTURE FOR SYSTEM GROWTH AND SYSTEM RELIABILITY

Q. Has the Company conducted an examination of the major capital investments made by the Company since 1996 ?

A. Yes. Since 1996, the Company has invested a total of $565 million to expand the distribution system and serve its customers in a safe and reliable manner. This includes $447 million for mains and services. These investment levels reflect a significant increase in recent years in the annual capital investment made by the Company for both system growth and system reliability. The Company's investment in mains and services is a function of three factors: (1) efforts to expand the total throughput of the system, which provides benefits for all customers in terms of lower per-unit costs; (2) increased focus on system replacements for reliability purposes; and (3) compliance with state, federal and local regulatory requirements. Exhibit KEDNE/PJM–8 is a list of non-revenue

producing investments in excess of $100,000 that have been completed since 1996. Exhibit KEDNE/PJM-9 shows the internal rate of return for the Company's total investments in system growth since 1996. Exhibit KEDNE/PJM–10 shows the internal rate of return for each revenue-producing investment completed since 1996 in excess of $100,000.

Q. Has the Company analyzed the rate of return on revenue-producing capital investments?

A. Yes. As stated above, Exhibit KEDNE/PJM-9 sets forth the rate of return on all investments made during the period 1996-2002 to expand the throughput of the system. Exhibit KEDNE/PJM-9 shows that returns ranging from 18.0 percent to 28.0 percent were achieved during the period 1996 through 2002. These investments are comprised of all direct and indirect capital costs and costs associated with the Company's promotional programs.

Q. Has the Company performed a similar analysis for revenue-producing capital investments in excess of $100,000?

A. Exhibit KEDNE/PJM-10 sets forth the rate of return on revenue-producing investments over $100,000 for the period 1996-2002. The Company has calculated its rate of return analysis on the basis of the total investments, which reflect all direct and indirect capital costs, and on the basis of marginal capital investment, which includes all direct costs and marginal indirect capital costs.

Q. Would you provide an overview of the CRIS investment and implementation effort?

A. Yes. In the test year, the Company invested approximately $33.8 million in the conversion from its Customer Service System ("CSS") to CRIS. Of this amount, approximately $23.6 million was allocated to Boston Gas with the remainder allocated to Colonial Gas and EnergyNorth Natural Gas Inc., in New Hampshire. As I stated above, the Company allocated an additional 7.6 percent of the $23.6 million to Essex Gas based on the Department's incremental accounting policy. This investment is being amortized over 10 years.

Q. What was the Company's decision-making process in making this investment?

A. The customer-information system is the backbone of a utility's operations. As such, the functionality of the system has a direct effect on the Company's ability to efficiently manage its operations and to establish and maintain a connection with customers. The customer-service system involves a broad array of business functions such as billing, general account services, cash payment and processing, credit and collection, field service management, gas supply and capacity forecasting, meter reading, and customer and revenue accounting. The customer-information system also enables communications between office and field personnel who are either in contact with customers or require customer information to provide service.

Following KeySpan's merger with Eastern Enterprises, integration efforts focused on the implementation of a single customer-information system for the KeySpan distribution companies in New York and New England. The continuation of separate and redundant customer-information systems for customers in the New England and New York service areas would impose unnecessary costs and inefficiencies. Alternatively, the implementation of a single customer-information system would facilitate customer-service improvements throughout KeySpan's different geographic areas.

Prior to the KeySpan/Eastern Enterprises merger, CSS was near the end of its useful life and Boston Gas was considering replacement of the system. The architecture of the system was founded on a database technology, i.e., the IDMS database management system, which was becoming obsolete. Because the architecture was outdated, it was not supported by market technologies and changes to the system were difficult and expensive to make. CRIS utilizes software and business processes that are consistent with market technologies and could best serve as a viable platform upon which system changes and additions could be made to achieve the future operational needs and objectives of each of the KeySpan LDCs. CRIS contains a relational database management architecture ("DB2"), real-time and event-driven processing, and a general capability to support change and the accommodation of new processes and technologies. The more sophisticated database architecture of CRIS provides

greater flexibility and efficiency in retrieving and managing customer data and allows system components to interface in a seamless manner.

CRIS also provides a far better platform upon which to build future system enhancements. Customer-information systems must continually be enhanced and maintained to meet the needs of customers and to satisfy regulatory requirements. System changes are costly in that upgrades to the system require the evaluation of system functionality, development, implementation and licensing of new software, training of personnel, and other related activities. By moving to a single customer-service system, and by choosing one with superior long-term capability, the Company would be in a position to add new customer services and related information technologies without expending the resources that otherwise would have been required under CSS.

Accordingly, KeySpan determined that the long-term interest of its customers, and the employees assisting those customers, would be best served by the integration of the customer-information systems and the system-wide implementation of CRIS. The conversion to CRIS would result in a higher level of customer-service functionality adding significant value to the Company's service to its customers. The same could not have been achieved with CSS without significant investment in its upgrade or replacement.

Q. Would you briefly describe some of the cost-containment efforts that the Company has implemented to manage expenditures associated with non-revenue producing investments?

A. Yes. Non-revenue producing expenditures are required to maintain the integrity of the Company's distribution system infrastructure, but are not susceptible to a "rate of return" analysis. In D.P.U. 93-60, at 36, n.13, the Department directed the Company to describe the cost-containment efforts undertaken in relation to these investments. The Company's chief objective in this regard has been to obtain better and more timely information from the field through the application of technology. The availability of data is key to the Company's decision-making process in terms of efficient resource procurement and allocation. In this regard, two major initiatives are the enhancements to the Company's Automated Mains and Mapping System ("AMMS") and Field Data Capture system, which are discussed below with the Company's other major cost-containment initiatives.

- Bypass Analysis: Upgrades to the Company's Stoner Model, which simulates gas pressures and flows on the distribution system under defined parameters, now allow the Company to obtain precise information regarding the location of isolation valves throughout the system. This makes system-isolation feasible as an alternative to the construction of bypasses when main installations or replacements are undertaken. In 2000-2002, the Company avoided construction of a bypass for 955 of the 1,476 bypass requests (or 65 percent). At an average cost of $5,000 per bypass, the Company saved approximately $4,775,000 over this time period.

- Participation in Purchasing Consortium (Enporium): Boston Gas participates through the Service Company in an aggregated bidding process for various inventory components such as gas meters, gas pipes and fittings, stationery, tools, computer components, anodes and safety supplies. Savings in 2002 were approximately $700,000.

- Coordination of Growth and Reinforcement Construction: Upgrades to the AMMS allow the Company to strategically schedule load-growth projects in conjunction with needed reinforcement projects to optimize the investment in system infrastructure. With the implementation of these upgrades in 2001, total costs for reinforcement were reduced by 5 to 10 percent annually, producing annual savings in the range of $350,000-$700,000.

- Cast Iron Main Replacement Program: In 2002, KeySpan relayed over 30,000 feet of poor condition cast-iron main. This main had experienced 119 main breaks and 219 joint leak repairs from 1986 to 2001. Based on this leakage rate, the Company projects that these segments of main would have experienced an average of 15 broken mains and 28 joint leaks necessitating repair annually. By relaying this cast iron main with plastic, the Company will save approximately $215,000 per year in maintenance expense.

- Bare Steel Main Replacement Program: In 2002, the Company relayed over 37,000 feet of poor condition steel main. These mains had experienced 370 corrosion leak repairs from 1986 through 2001. Based on this rate of corrosion, the Company projects that these segments of main would have experienced an average of 29 leaks necessitating repair per year. By relaying this bare steel main with plastic, the Company will save approximately $145,000 per year in maintenance cost.

- Warehouse Consolidation: In 2000, the Company consolidated its inventory warehouses and pipeyards in New England to one central location in Wilmington, Massachusetts. This centralization allowed for the elimination of 10 warehouses and 6 pipe-yards and a combined inventory process, which reduced costs associated with New England inventory storage by $2.3 million, or approximately $1.6 million for Boston Gas.

- Implementation of Bass-Trigon: In 2001, the Company implemented a corrosion control data management system referred to as "Bass-Trigon." With the electronic organization of records and field-data capture for corrosion testing, the Corrosion Control Department has been able to test more pipe without increasing costs. The Company has completed cathodic protection for more than 900 miles of steel pipe, which was installed prior to U.S. Department of Transportation regulations requiring such protection.

- Enhancements to AMMS: Upgrades to the AMMS system include: (1) identification of critical mains to avoid unintentional disruptions; (2) monitoring of municipal paving activities to enable cost-effective coordination with Boston Gas system replacement projects; (3) the ability to superimpose maps on system diagrams to provide a better geographical frame of reference; (5) development of a global positioning system to pinpoint critical valves more efficiently; and (6) display of corrosion protection process to more readily pinpoint areas for cathodic protection. These upgrades will facilitate process improvements throughout the Boston Gas operations.

- Field Data Capture: The Company developed and implemented the Field Data Capture system to automate the collection of all maintenance, construction and damage prevention daily work activities. The implementation of this system eliminated the need for clerical tasks and allowed for real-time data entry into the Field Work Management System. This system, through the use of mobile pen applications in each vehicle, provides field operations with real time service pipe and AMMS viewing capabilities as well as access to the Company's emergency plan and O & M manual through web-based technology. In addition, enhanced record keeping will ensure accurate and reliable information for field operations during routine and emergency situations.

- Changes to Contractor Bidding Process: A significant portion of the Company's system-reliability capital expenditures involve the use of outside contractors to complete pipeline replacement projects. These contractors are chosen through a formal competitive bid process. The contractors submit prices for plastic and steel main and service installations according to pipe size and specified geographical areas. The contractor responses are compiled into a reference document that allows the Company to compare costs and services for budgeted projects. In 2002, the Company completed a major review of its contractor bidding process. Through such revisions as an expansion of the list of contractors and tighter terms and conditions, the Company was able to obtain increased price concessions despite significant increases in inflation, materials, labor and health-care costs being experienced by contractors.

Q. Does this conclude your testimony?

A. Yes.